



## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/DE2004/000248

Box No. I

## Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-29 \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. \_\_\_\_\_ as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* 1-14 \_\_\_\_\_ received by this Authority on 07.02.2005 with the letter of 03.02.2005
- nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- sheets 1/3-3/3 \_\_\_\_\_ as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

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| Box No. V                                 | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement  |      |     |
|---|--|------|-----|
| 1. Statement                              |  |      |     |
| Novelty (N)                               | Claims   |      | YES |
|   | Claims   | 1-14 | NO  |
| Inventive step (IS)                       | Claims   |      | YES |
|   | Claims   | 1-14 | NO  |
| Industrial applicability (IA)             | Claims   | 1-14 | YES |
|   | Claims   |      | NO  |
| 2. Citations and explanations (Rule 70.7) |  |      |     |
| 1   | This report makes reference to the following documents:  |      |     |
|   | D1: WO 01/00843 A (BASF AG)<br>4 January 2001 (2001-01-04)   |      |     |
|   | D2: KUBOTA K: "IMPROVED PRODUCTION OF L SERINE BY<br>MUTANTS OF CORYNEBACTERIUM-GLYCINOPHILUM WITH<br>LESS SERINE DEHYDRATASE EC-4.2.1.13 ACTIVITY"<br>AGRICULTURAL AND BIOLOGICAL CHEMISTRY, vol.<br>49, no. 1, 1985, pages 7-12, XP002287205<br>ISSN: 0002-1369            |      |     |
|   | D3: US-A-4 528 273 (LOVINGER GERALD G ET AL)<br>9 July 1985 (1985-07-09)   |      |     |
| 2   | <b>Clarity</b> (PCT Article 6)   |      |     |
|   | The expressions "changed", "modified form" and "isoform" used in claim 1 are vague and unclear and leave the reader uncertain as to the meaning of the technical features in question. As a result, the subject matter of said claim is not clearly defined (PCT Article 6). |      |     |

| Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement  |
|-----------|--|
|           | <p data-bbox="391 333 1370 464">Back-reference of claim 6 to claim 4: claim 4 pertains to a protein, not to a nucleic acid, gene structure or vector.</p> <p data-bbox="391 537 1370 667">The back-reference of claim 14 to claims 1-8 is incorrect. Claims 1-8 pertain to a protein, not to a nucleic acid, gene structure or vector.</p> <p data-bbox="272 741 894 772">3      <b>Novelty</b> (PCT Article 33(2))</p> <p data-bbox="391 846 1370 919">D1 discloses (the references in parentheses are to this document):</p> <p data-bbox="391 947 1370 1734">L-serine dehydratase (SEQ ID NO: 141, coding for a "metabolic pathway protein" MP SEQ ID NO: 142, page 3, lines 11-12) with reduced L-serine dehydratase activity, with an amino acid sequence as per SEQ ID NO: 2 (page 3, lines 18-22; page 5, line 15; for example, "functional disrupted", page 8, lines 6-18), which can thus be considered a 'modified form' of the enzyme claimed in claim 1. Further, microorganisms and processes for the microbial production of L-serine using a nucleic acid coding for said enzyme are disclosed (page 23, paragraph 1; page 35, paragraph 3 to page 37, paragraph 1; page 41, paragraph 2 to page 44, paragraph 1; page 49, paragraph 2; page 51, paragraph 4; page 52, paragraph 2 to page 54, paragraph 1).</p> <p data-bbox="391 1808 1370 1934">D2 and D3 disclose microorganisms in which the nucleotide sequence coding for L-serine dehydratase is mutated and which lack SD(A) -</p> |

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activity. Further, processes for the microbial production of L-serine using the indicated enzyme are disclosed.

The present application therefore does not meet the requirements of PCT Article 33(1) because the subject matter of claims 1-14 is not novel within the meaning of PCT Article 33(2).

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## Supplemental Box Relating to Sequence Listing

## Continuation of Box No. I, item 2:

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this report was established on the basis of:
- a. type of material
- ☒ a sequence listing
- ☐ table(s) related to the sequence listing
- b. format of material
- ☒ in written format
- ☒ in computer readable form
- c. time of filing/furnishing
- ☒ contained in the international application as filed
- ☐ filed together with the international application in computer readable form
- ☒ furnished subsequently to this Authority for the purposes of search and/or examination
- ☒ received by this Authority as an amendment\* on \_\_\_\_\_
2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

\* If item 4 in Box No. I applies, the listing and/or table(s) related thereto, which form part of the basis of the report, may be marked "superseded."